

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

Reserve
1.96
R31Fso



WATER SUPPLY SUMMARY AND OUTLOOK FOR OREGON

Prepared by
U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE
Collaborating with
OREGON STATE UNIVERSITY
and
STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF
OCT. 1, 1973

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY SUMMARY AND OUTLOOK FOR OREGON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued

OCTOBER 8, 1973

Issued by

KENNETH E. GRANT

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

|||||

Released by

A.J. WEBBER

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
PORTLAND, OREGON

In Cooperation with

G. BURTON WOOD

DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER

STATE ENGINEER
STATE OF OREGON

|||||

Report prepared by

TOMMY A. GEORGE, Snow Survey Supervisor

and

HOWARD M. VANCE, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

WATER SUPPLY SUMMARY AND OUTLOOK for OREGON

October 1, 1973

Water shortages were encountered by most Oregon water users this past season. Hardest hit were those irrigators dependent upon direct streamflow, as many streams peaked extremely early in the season and some not at all. Even those users with stored supplies experienced some water shortages, with the normal season being cut back 3 to 4 weeks early. The Owyhee project in eastern Oregon did have adequate supplies.

Good water management practices, such as sprinkler irrigation, were responsible for making the water supply "do" in many locations. These areas, such as; Stanfield Irrigation District, and the North Unit Project at Madras, would have had even shorter seasons without good management.

There were additional problems, besides those of the irrigators, caused by the lack of precipitation and low streamflow. Some of these were: Damage to the fisheries resource, to domestic, municipal and industrial water supplies, and shortages of water for power generation. Low reservoir levels also interfered with normal recreational uses in some areas.

Precipitation was below normal all summer, except for the month of September, when a series of storms moved across Oregon and gave some relief to the drought parched rangelands and tinder dry forests.

Flows were extremely low in most Oregon rivers and streams this past summer, with some recovery in September from the good rainfall and cooler temperatures.

Representative streamflow for the runoff season, expressed as a percent of average versus the May 1 forecasts, is as follows:

	<u>Period</u>	<u>Obs. Flow</u>	<u>May 1 Forecast</u>
Owyhee net Inflow	May-Sept.	81%	93%
Grande Ronde at La Grande	May-Sept.	34%	43%
Willamette, Mid. Fk. blw. N. Fk.	May-Sept.	54%	67%
Rogue at Raygold	May-Sept.	63%	73%
Upper Klamath Lake net Inflow	May-Sept.	52%	55%
Chewaucan near Paisley	May-Sept.	60%	50%

continued on next page

continued -

Carryover storage in most of the major irrigation reservoirs is poor because of the low streamflow and the necessary deliveries made to water users. Exceptions are Owyhee, Clear Lake, Upper Klamath Lake, Prineville, and Timothy Lake reservoirs, which are storing average or above amounts.

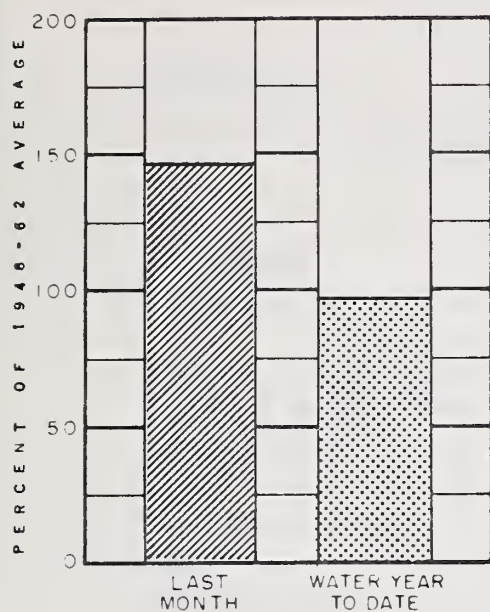
With many of the smaller irrigation reservoirs empty, much more than average amounts of snow are needed this next winter to insure ample water supplies next spring and summer.

This report contains data furnished by the Oregon State Engineer, U. S. Geological Survey, NOAA National Weather Service, and other cooperators.

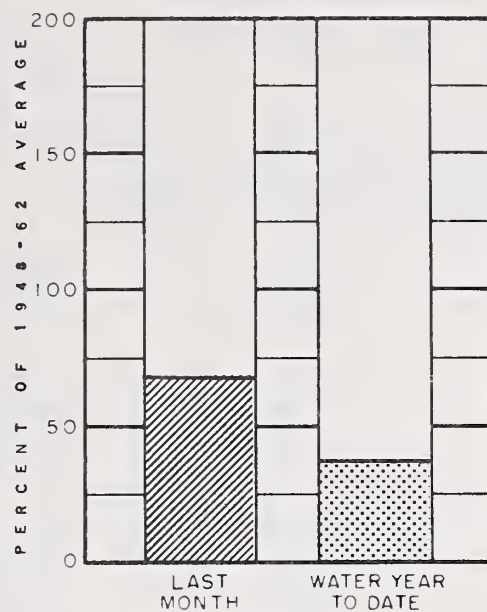


CURRENT OREGON STREAMFLOW

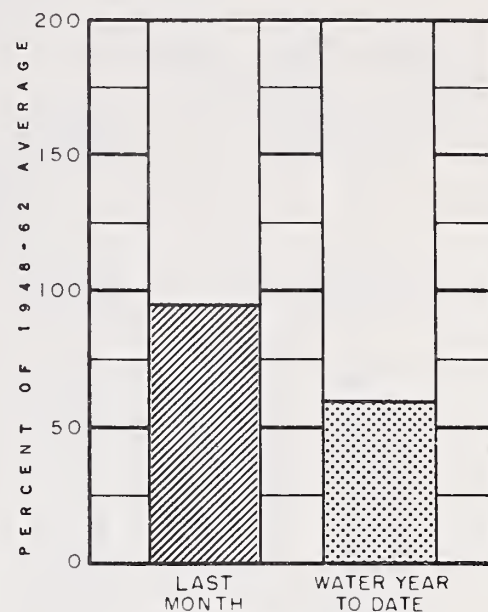
October 1, 1973



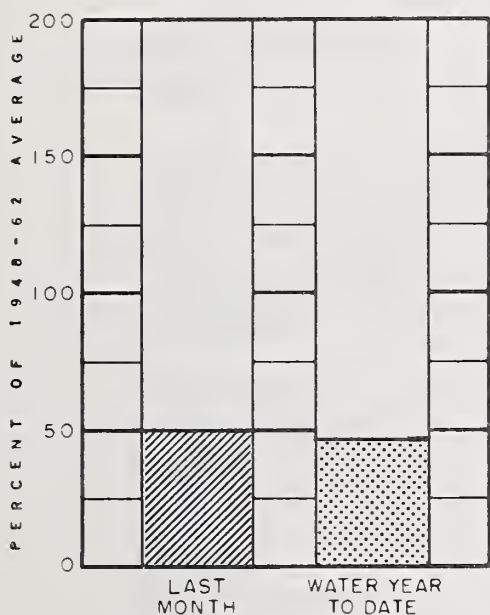
Owyhee Lake net inflow



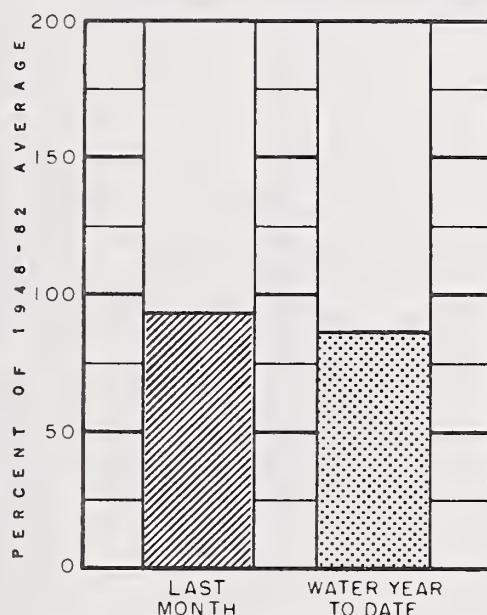
Grande Ronde at La Grande



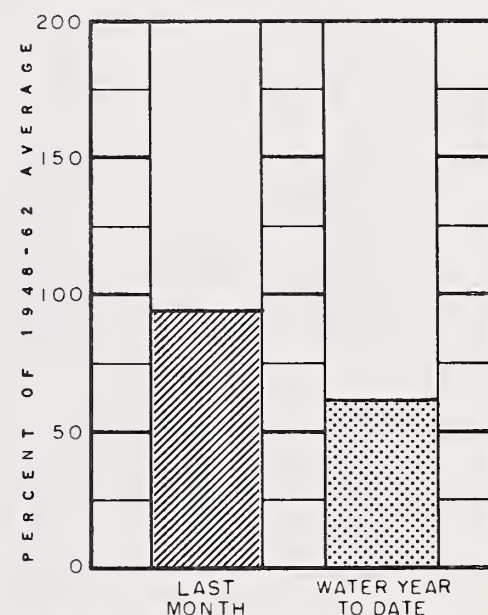
Chewaucan nr. Paisley



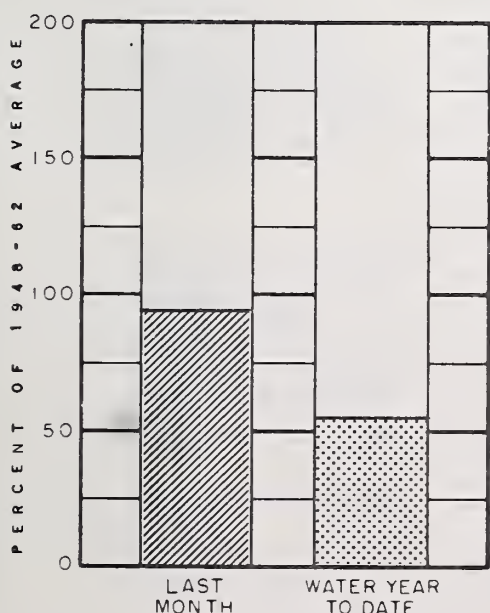
John Day at Service Creek



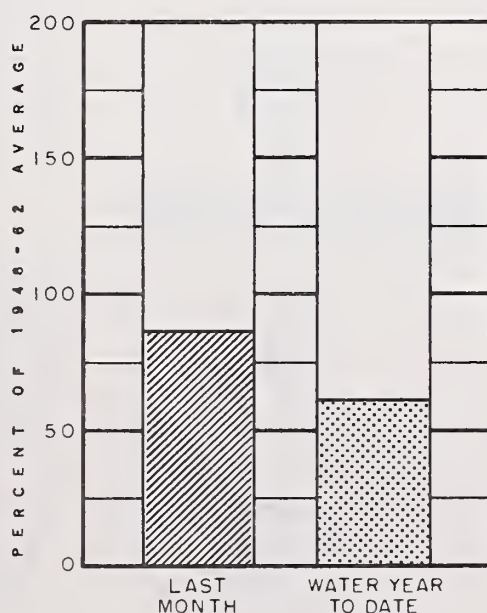
Deschutes at Moody



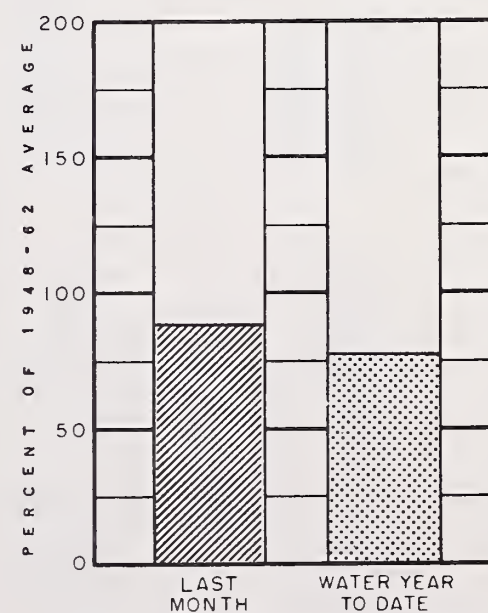
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.; and North and South Boards of Control Owyhee Project.

STATUS OF RESERVOIR STORAGE, OCTOBER 1, 1973

RESERVOIR	USABLE	THOUSANDS ACRE FEET IN STORAGE ABOUT OCT. 1		
	CAPACITY (Thous. A.F.)	1973	1972	15-Year Average 1953-67
<u>UPPER COLUMBIA DRAINAGE</u>				
Antelope	70.0	<i>b</i>	6.7	6.9
Owyhee	715.0	387.3	447.2	281.9
Beulah Reservoir	60.0	0.4	14.8	8.1
Bully Creek	30.0	0.5	4.7	6.4
Warm Springs	191.0	1.1	77.7	45.6
Phillips Lake	73.5	11.2 ^f	43.0	- -
Unity	25.2	0.7	2.0	2.7
Wallowa Lake	37.5	2.3	10.7	15.4
<u>LOWER COLUMBIA DRAINAGE</u>				
Cold Springs	50.0	2.1	2.6	2.6
McKay	73.8	0.2	9.2	6.1
Ochoco	47.5	1.0	24.1	15.0
Prineville	153.0	91.7	101.7	103.0
Crane Prairie	55.3	10.0	33.3	22.9
Crescent Lake	86.9	55.0	66.3	33.9
Wickiup	200.0	30.8	128.3	45.6
Blue River	85.6	16.8	- -	- -
Cottage Grove	30.0	18.1	2.9	5.5
Cougar	155.2	65.8	76.6	- -
Detroit	299.9	161.8	175.0	193.0
Dorena	70.5	31.6	31.0	7.2
Fall Creek	115.0	81.9	29.1	- -
Fern Ridge	94.2	63.3	74.8	50.7
Foster	30.0	29.7	24.0	- -
Green Peter	270.0	130.5	108.6	- -
Hills Creek	200.0	90.8	89.2	124.7
Lookout Point	337.2	134.3	168.8	213.4
Timothy Lake	61.7	63.0	61.4	58.6
<u>WEST COAST DRAINAGE</u>				
Fourmile Lake	16.1	1.4	9.0	6.7
Fish Lake	8.0	2.1	7.0	2.4
Howard Prairie	60.0	35.8	49.4	33.6
Hyatt Prairie	16.1	7.6	7.9	7.9
Emigrant Lake	39.0	2.3	6.2	9.4
Upper Klamath	584.0	247.4	394.4	307.3
Gerber	94.0	24.0	45.9	27.1
Clear Lake	440.2	225.2	284.5	168.6
Cottonwood	8.7	0.1	0.0	0.4
Drews	63.0	23.3	29.5	24.0

SOIL MOISTURE as of October 1, 1973

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average ⁱ
OWYHEE, MALHEUR WATERSHEDS							
Bear Creek (Nev.)	7800	72	16.8	c			
Big Bend (Nev.)	6700	48	16.7	c			
Blue Mountain Springs	5900	42	16.9	9/27	6.6	5.2	5.9
Crane Prairie	5375	48	18.2	9/27	14.8	14.5	14.6
Jordan Valley	4390	48	19.3	9/28	14.0	15.9	14.4
Mud Flat (Ida.)	5500	48	12.8	10/4	9.7	- -	- -
Rodeo Flat (Nev.)	6800	42	11.0	9/27	4.9	4.9 ^f	- -
Taylor Canyon (Nev.)	6200	48	15.1	9/27	7.2	7.7 ^f	10.3 ^m
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS							
Blue Mountain Summit	5100	36	16.8	b		8.3	7.7
Dooley Mountain	5430	36	9.2	9/25	2.4	2.3	3.0
Emigrant Springs	3925	48	22.3	9/28	14.9	16.0	12.9
Ladd Summit	3730	48	18.9	9/26	8.9	9.3	8.9
Moss Springs	5850	36	25.8	9/26	14.2	12.6	- -
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS							
Battle Mountain Summit	4340	48	13.8	9/28	9.6	9.9	9.3
Emigrant Springs	3925	48	22.3	9/28	14.9	16.0	12.9
UPPER JOHN DAY WATERSHEDS							
Battle Mountain Summit	4340	48	13.8	9/28	9.6	9.9	9.3
Beech Creek	4800	48	21.3	9/28	9.5	9.3	9.8
Blue Mountain Springs	5900	42	16.9	9/27	6.6	5.2	5.9
Blue Mountain Summit	5100	36	16.8	b		8.3	7.7
Derr	5670	24	9.0	9/24	4.2	- -	4.1
Marks Creek	4540	36	14.1	10/4	8.7	8.8	9.0
Starr Ridge	5150	36	10.6	9/27	7.3	7.2	7.3
Williams Ranch	4500	42	17.9	9/27	14.7	14.9	14.5
UPPER DESCHUTES, CROOKED WATERSHEDS							
Derr	5670	24	9.0	9/24	4.2	- -	4.1
Marks Creek	4540	36	14.1	10/4	8.7	8.8	9.0
KLAMATH WATERSHEDS							
Quartz Mountain	5320	48	15.3	9/21	5.0	5.2	5.6
LAKE COUNTY, GOOSE LAKE WATERSHEDS							
Camas Creek	5720	42	14.5	b		8.7	8.8
Quartz Mountain	5320	48	15.3	9/21	5.0	5.2	5.6
HARNEY BASIN WATERSHEDS							
Blue Mountain Spring	5900	42	16.9	9/27	6.6	5.2	5.9
Starr Ridge	5150	36	10.6	9/27	7.3	7.2	7.3
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1953-67 adjusted average. (i) 1953-67, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.							

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1953-67 adjusted average. (i) 1953-67, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil and Water Conservation Districts of Oregon

COUNTY

- Douglas County Water Resources Survey

FEDERAL

- Department of Agriculture
 - Cooperative Extension Service
 - Forest Service
 - Soil Conservation Service
- Department of Commerce
 - NOAA, National Weather Service
- Department of the Interior
 - Bonneville Power Administration
 - Bureau of Land Management
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - Geological Survey
 - National Park Service
- Department of National Defense
 - Corps of Army Engineers

PUBLIC UTILITIES

- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES

- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS

- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Hood River Irrigation District
- Jordan Valley Irrigation District
- Juniper Flat Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- Middle Fork Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warm Springs Irrigation District

PRIVATE ORGANIZATIONS

- The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
1218 S.W. WASHINGTON ST.
PORTLAND, OREGON 97205

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

Return this entire sheet to above address, if you do NOT wish to receive this material ☐, or if change of address is needed ☐ (indicate changes in address below, including ZIP code).

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

*"The Conservation of Water begins
with the Snow Survey"*

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF
AGRICULTURE
AGR-101



FIRST CLASS MAIL

USDA NATIONAL AGRICULTURAL LIBRARY
CURRENT SERIAL RECORD
BELTSVILLE, MARYLAND 20705